19. The method of claim 18, further comprising utilizing a capacitive barrier to isolate the powered side circuitry and the phone line side circuitry.

20. The method of claim 19, further comprising passing digital data bidirectionally across the isolation barrier.

21. The method of claim 20 further comprising transmitting digital ringer data bidirectionally across the isolation barrier.

a7 (amended) 22. The method of claim 20, further comprising powering at least one portion of the second integrated ringer circuitry with power transmitted across the isolation barrier.

23. The method of claim 19 further comprising transmitting digital ringer burst signals from the first integrated ringer circuitry to the powered side circuitry.

24. The method of claim 19 further comprising transmitting digital ringer timing signals from the second integrated ringer circuitry to the phone line side circuitry.

REMARKS

Claims 1-24 are currently pending. This paper amends claims 1, 12, 13, 18, and 22.

Drawing Corrections

Filed herewith is a request for correction of Figure 10. Also enclosed are formal figures which include the corrected Figure 10.

Specification Amendments

The Office Action request corrections to the cross-references to related applications. The requested changes are provided herein.

The Office Action also objects to the use of the term "may" within the Abstract. The Applicant has removed the term "may" from line 2. However, the Applicant respectfully has declined to remove the other instances of the term. The Office Action states that "The language 'may utilize' is not definite language to indicate whether the ring detection circuitry is necessary for the invention." The Applicants respectfully assert that the Office Action is applying the standards of claim limitations to the Abstract and that the claimed inventions are defined by each individual claim. In particular, it is noted that most of the uses of the term "may" refer to elements that are not in the independent claims but present in dependent claims. For example, the objected term "may" in line 3 refers to such elements. The Applicants respectfully submit that it is inappropriate and in fact misleading to the public to state that additional limitations present in dependent claims are "necessary for the invention." For example, at least some of the additional limitations are not required for the broader inventions claimed in the independent claims.

Claim Rejections §112

The Office Action rejects claims 1, 12, 13, and 18 for the use of the term "may." The Office Action notes that "may be coupled" is not a definite language to indicate whether "phone line circuitry" is necessary to be coupled to "phone lines" and whether "powered side circuitry" is necessary to be coupled to "phone line side circuitry" through an isolation barrier. The language objected to has been deleted it has been affirmatively asserted that the circuits are configured to by capable of the claimed coupling.

The Office Action also rejects claims 9 and 22 to indicate what portion of the integrated circuitry is powered. The Applicants respectfully note claim 9 is not limited to the portion of the circuitry that is powered but rather limited to the source of the power for the claimed circuitry. Thus, as drafted the claim 9 includes a portion of the power being provided across the isolation barrier. With respect to claim 22, the claim has been amended as shown herein.

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Double Patenting Rejection

Though the Applicants respectfully disagree with at least some of the double patenting rejections, since the cited references all have a common earliest priority date, the Applicants have provided a terminal disclaimer herein to render the rejection moot.

Rejections Under §103

The Office Action rejects all claims under §103 over Hershbarger in view of Apfel and Zanders. With regard to independent claims 1, 12, and 18 the Office Action relies upon Hershbarder but notes that "Hershbarger does not teach expressly an integrated ringer circuitry and a ringer burst detection circuitry." [Office Action, p. 8 and p. 10] The Office Action then states that Apfel and Zanders teach these elements.

However, the Applicants respectfully assert that even if combined the cited references do not teach the claimed combination. The Applicants claims are directed towards circuitry used to terminate phone lines at the user end of the phone lines. An example of the use of circuitry is a modem located in a personal computer that is coupled to a phone line for connection to other computers, the internet, etc. Pursuant to governmental regulations, such devices generally require an electrical isolation between the phone line and the user's power system (such as for example the power system of a home or office).

Though the Office Action states that Apfel and Zanders teach integrated ringer circuitry and ringer burst detection circuitry, the Applicants note that the independent claims do not merely require the presence of integrated ringer circuitry and ringer burst detection circuitry. Rather, the claims include limitations directed towards partitioning the ringer related circuitry on both sides of the use end isolation barrier. Thus, ringer circuitry is provided on both the users phone line side of the isolation barrier and on the users powered side of the isolation barrier.

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For example, claims 1 and 12 include "phone line side integrated ringer circuitry within the phone line side circuitry; and powered side integrated ringer circuitry within the powered side circuitry."

Likewise, claim 18 includes "partitioning ringer circuitry between both the powered side circuitry and the phone line side circuitry such that first integrated ringer circuitry is located within the powered side circuitry and a second integrated ringer circuitry is located with the phone line side circuitry."

The cited art does not teach the claimed partitioning of the ringer circuitry across both sides of the isolation barrier, singularly or in combination. As such, the Applicants respectfully assert that even if the cited combination is made, the combination lacks elements of the claimed invention of each independent claim. As such, the Applicants respectfully assert that independent claims 1, 12, and 18 (and all claims depending therefrom) are patentably distinct from the cited combination. Favorable action is therefore respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that the claims are in condition for allowance. Accordingly, favorable reconsideration and Notice of Allowance are courteously solicited.

Should any fees under 37 CFR 1.16-1.21 be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct such fees from Deposit Account No. 10-1205/SILA:019. The examiner is invited to contact the undersigned at the phone number

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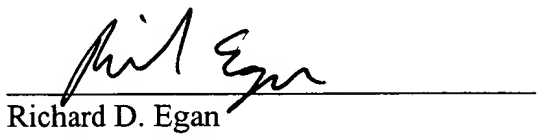
indicated below with any questions or comments, or to otherwise facilitate expeditious and compact prosecution of the application.

Respectfully submitted,



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APPENDIX
MARKED UP VERSION OF AMENDMENTS
AS REQUIRED BY RULE 121

In The Specification:

On Page 1, the first paragraph:

Cross-References to Related Applications

This is a continuation-in-part of U. S. Serial Nos. 08/841,409, 08/837,702 and 08/837,714 all filed on April 22, 1997. Further, the following U. S. patent applications filed concurrently herewith Serial No. [_____] 09/034,687, entitled "Digital Isolation System With Data Scrambling" by Andrew W. Krone [George Tyson Tuttle] et al.; Serial No. [_____] 09/034,456, entitled "Digital Isolation With ADC Offset Calibration" by Andrew W. Krone et al.; Serial No. [_____] 09/034,455, entitled "Ring-Detect Interface Circuitry and Method for a Communication System" by Timothy J. Dupuis et al.; Serial No. [_____] 09/035,779, entitled "Call Progress Monitor Circuitry and Method for a Communication System" by Timothy J. Dupuis et al.; Serial No. [_____] 09/034,683, entitled "External Resistor and Method to Minimize Power Dissipation in DC Holding Circuitry for a Communication System" by Jeffrey W. Scott et al.; Serial No. [_____] 09/034,682, entitled "Framed Delta Sigma Data With Unlikely Delta Sigma Data Patterns" by Andrew W. Krone et al.; and Serial No. [_____] 09/035,175, entitled "Direct Digital Access Arrangement Circuitry and Method for Connecting to Phone Lines" Jeffrey W. Scott et al., are expressly incorporated herein by reference.

On page 29, the second paragraph:

A preferred embodiment of frequency detector 818 is shown in Figure 10. The inputs to frequency detector 818 are the DATA and CK4 signals and the outputs are the SPEED-UP2 and SLOW-DOWN2 signals. Delay cell 880 has its input connected to CK4 and output connected to one input of NOR gate 882. The delay cell 880 consists of an even number of capacitively loaded inverter stages or other delay generating circuitry and is well known in the art. The output of inverter 884 is connected to the other input of NOR gate 882 and the input of inverter 884 is connected to CK4. The output 886 of NOR gate 882 is reset pulse that occurs on the

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rising edge of CK4, and is connected to the reset input of D flip-flops 888, 890, and 892. The input of inverter [894] 895 is connected to DATA. The output of inverter [894] 895 is connected to the clock input of D flip-flops 888, 890, and 892. The D input of flip-flop 888 is connected to V_{DD}. The D-input of flip-flop 890 is connected to the Q-output of flip-flop 888. The D-input of flip-flop 892 is connected to the Q-output of flip-flop 890. D flip-flops 894 and 896 have their clock inputs connected to CK4. The D input of flip-flop 894 is connected to the Q output of flip-flop 888. The D-input of flip-flop 896 is connected to the Q-output of flip-flop 890. The input of inverter 898 is connected to the Q-output of flip-flop 894, and the output of inverter 898 is the SLOW-DOWN2 signal. OR gate 900 provides the SPEED-UP2 signal. One input of OR gate 900 is connected to the Q-output of flip-flop 896, and the other input is connected to the Q-output of flip-flop 892. The SPEED-UP2 and SLOW-DOWN2 signals are connected to the frequency-detector charge pump 824.

In The Abstract:

A communication system of the present invention [may] utilizes ring detection circuitry on both sides of an isolation barrier. More particularly, the ring detection circuitry may include ring burst circuitry on the phone line side of the isolation barrier and ringer timing circuits on the powered side of the isolation barrier. The digital burst peak signal may be transmitted through the isolation barrier to the ringer timing circuits [1708]. By splitting the ring detection circuitry so that the ringer timing circuits are placed on the powered side of the isolation barriers, a significant reduction in the power usage on the phone line side of the barrier related to the ring detection function may occur. The outputs of the ringing timing circuits may be provided to circuits on either side of the isolation barrier. Thus, the ring detection function may be accomplished in a system utilizing an efficient bidirectional capacitive barrier while still minimizing power usage on the line side of the barrier.

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In The Claims:

1. (Amended) A communication system, comprising:

phone line side circuitry [that may be] capable of being coupled to a user end of phone lines;

powered side circuitry [that may be] capable of being coupled to the phone line side circuitry through an isolation barrier;

phone line side integrated ringer circuitry within the phone line side circuitry; and

powered side integrated ringer circuitry within the powered side circuitry.

12. (Amended) A communication system, comprising:

phone line side circuitry [that may be] capable of being coupled to a user end of phone lines;

powered side circuitry;

an isolation barrier coupled between the phone line side circuitry and the powered side circuitry, the isolation barrier allowing the bidirectional communication of digital signals from the phone line side circuitry and the powered side circuitry;

phone line side integrated ringer circuitry within the phone line side circuitry; and

powered side integrated ringer circuitry within the powered side circuitry.

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13. (Amended) The system of claim 12, wherein the phone line side integrated ringer circuitry [may be] is powered at least in part by power extracted from signals transmitted across the isolation barrier.

18. (Amended) A method of providing a communication system [that may be] capable of being coupled to a user end of a phone line, comprising:

coupling an isolation barrier between powered side circuitry and phone line side circuitry; and

partitioning ringer circuitry between both the powered side circuitry and the phone line side circuitry such that first integrated ringer circuitry is located within the powered side circuitry and a second integrated ringer circuitry is located with the phone line side circuitry.

22. (Amended) The method of claim 20, further comprising powering at least [a] one portion of the second integrated ringer circuitry with power transmitted across the isolation barrier.

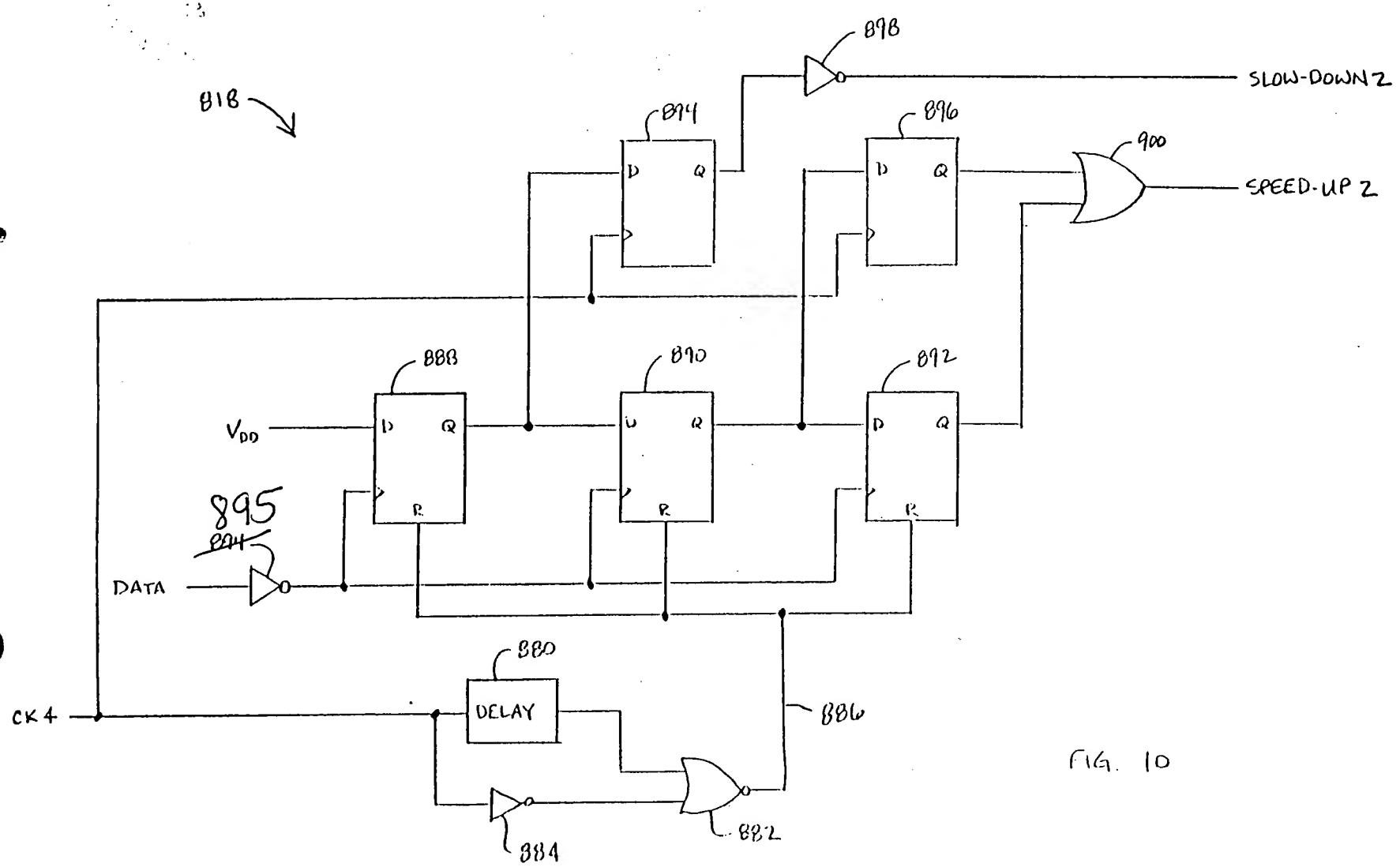
818
898
SLOW-DOWN Z
894
896
900
D
Q
SPEED-UP Z
888
890
892
V_{DD}
R
895
DATA
880
DELAY
886
884
882

FIG. 10